



An Update on the Taiwan Defense Situation (2011-2012)

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Introduction

Historically, Taiwan and the United States have relied on Taiwan's ability to deter Chinese hostility by projecting a strong force and making a Chinese attack appear costly, with unpredictable outcomes. Taiwan's defense situation, however, is no longer a credible deterrent to Chinese attack. Today, the greatest threats to the Republic of China (ROC) from the People's Republic of China (PRC) are in the forms of cyber and electronic warfare, espionage, and, in a highly tense situation, a blockade.

China uses a strategy of both deterrence and coercion to influence the Taiwan government and discourage action toward independence. In the event of actual combat, China will seek to first utilize the information it has available about Taiwan's situation and tactics, and then use that information for an effective attack. Thus, espionage and cyber/electronic warfare are key strategic measures employed by the Chinese People's Liberation Army (PLA). The highest imperative for the PLA in the event of such conflict is to deny U.S. operational access by way of Chinese amphibious and air assault, area denial, and cyber/electronic warfare. Therefore, steps must be taken to ensure that Taiwan can at the very least hold out until U.S. forces intervene.

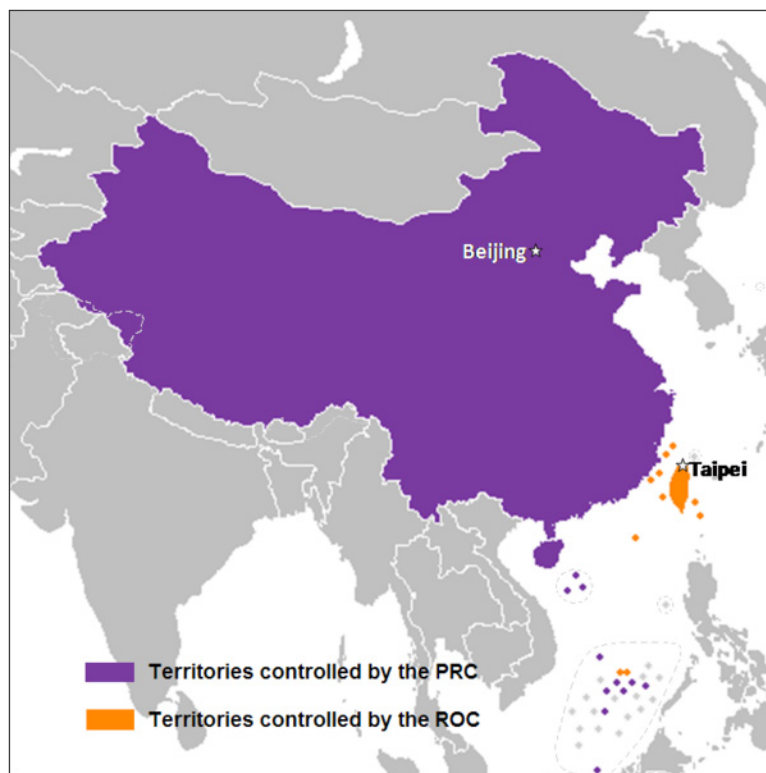
The United States' main goal is to maintain operational access. Prerequisites for such ability require that Taiwan possess the capabilities to weather an initial attack by PLA forces in order to 1) shock and delay a Chinese takeover and 2) allow a window of opportunity for U.S. forces to intervene. The U.S. must not rely solely on its own forces to guarantee this. It is established that pre-existing conditions are the main determinant for whether access can be guaranteed. Necessary pre-existing conditions include the ability of Taiwan to successfully defend itself and ensure

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that its forces can keep a window of opportunity open for U.S. entrance before China attacks. Thus, it is in U.S. interests to support and guarantee that Taiwan maintains credible deterrence.

On the other hand, it is important to keep in mind the fact that U.S. policymakers have reservations about just how capable Taiwan ought to be. While Taiwan must be able to effectively defend itself, it should not necessarily be able to conduct war on the mainland. Therefore, missiles that can be fired into PRC territory are not attractive options, nor are fighter jets that are capable of crossing the Taiwan Strait. Furthermore, and perhaps most importantly, there is justifiable apprehension that Taiwan is unable to effectively control information and intelligence access. It is of the highest concern that sensitive information and technology given to Taiwan does not fall into enemy hands. Thus, all arms packages and cooperation deals have to be considered with these issues in mind.



Furthermore, and perhaps most importantly, there is justifiable apprehension that Taiwan is unable to effectively control information and intelligence access. It is of the highest concern that sensitive information and technology given to Taiwan does not fall into enemy hands. Thus, all arms packages and cooperation deals have to be considered with these issues in mind.

In September 2012 the Taiwan National Security Bureau (NSB) submitted to the Legislative Yuan its budget plan for 2013. The plan showcases a heightened understanding that Taiwan must move away from high cost, large defense projects and emphasize a defense involving light, swift, and highly effective forces that are easily and quickly transportable, and increased efforts to defend against Chinese cyber/electronic attack. Thus, the new NSB budget has called for a decrease in conventional spending and an increase in defensive cyber/electronic warfare capabilities.

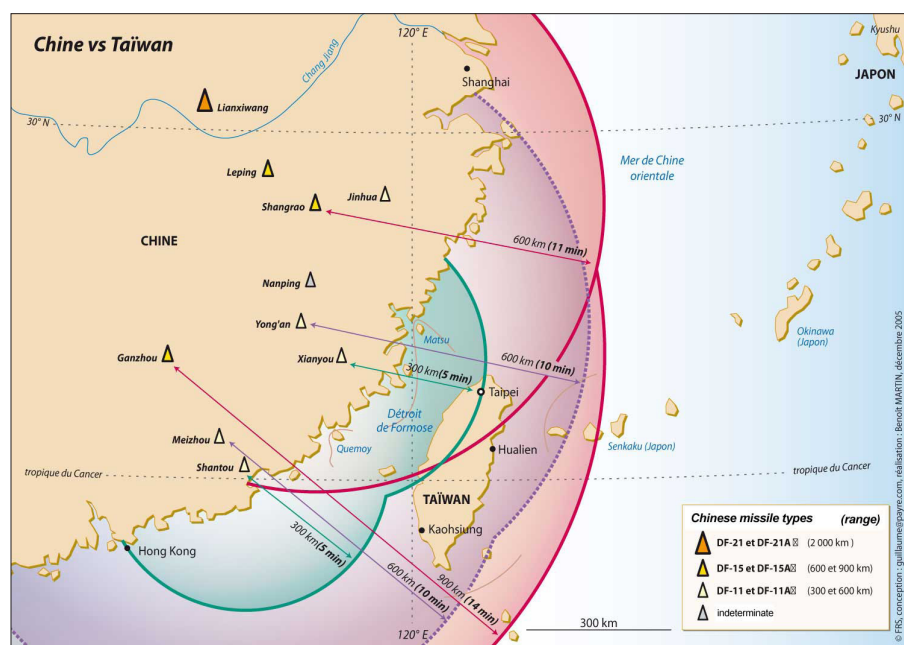
This report serves as an up-to-date analysis on the developments of the Taiwan defense forces

since the beginning of 2012. It is not and does not attempt to be an in-depth assessment of the Chinese threat and capabilities or a recommendation on future Taiwanese defense acquisitions.

Air Power

Taiwan has not enjoyed air dominance over the Strait since 2009. China's growing investment in its military is strongly focused on air power, as well as sea power. Currently, Taiwan's air forces are significantly smaller than China's, but the most pertinent issue is the fact that Taiwan's force will, in very real terms, become even smaller as F-16A/B are retrofitted and old fighters are retired. Taiwan's existing forces include 45 F-5 and 56 Mirage 2000 fighters, which will be retired by 2020. A number of F-CK-1 Indigenous Defense Forces (IDF) are also undergoing upgrades and thus not combat ready.

For several years, the retrofit package of Taiwan's existing 145 F-16A/B fighters has been of high interest. The package was approved on July 13 for upgrade of 145 F-16A/Bs at a total cost of US\$3.8 billion. The 9-year contract will most likely be held between Lockheed-Martin, Raytheon, and Taiwan's Aerospace Industrial Development Corporation (AIDC). The package will include structural upgrades, improved avionics, expanded electronic warfare capabilities, and, most notably, Advanced Active Electronically-Scanned Array radar devices for the A/Bs and a package of joint direct attack munitions guidance kits (JDAMs) and AIM-9 Sidewinder air-to-air,



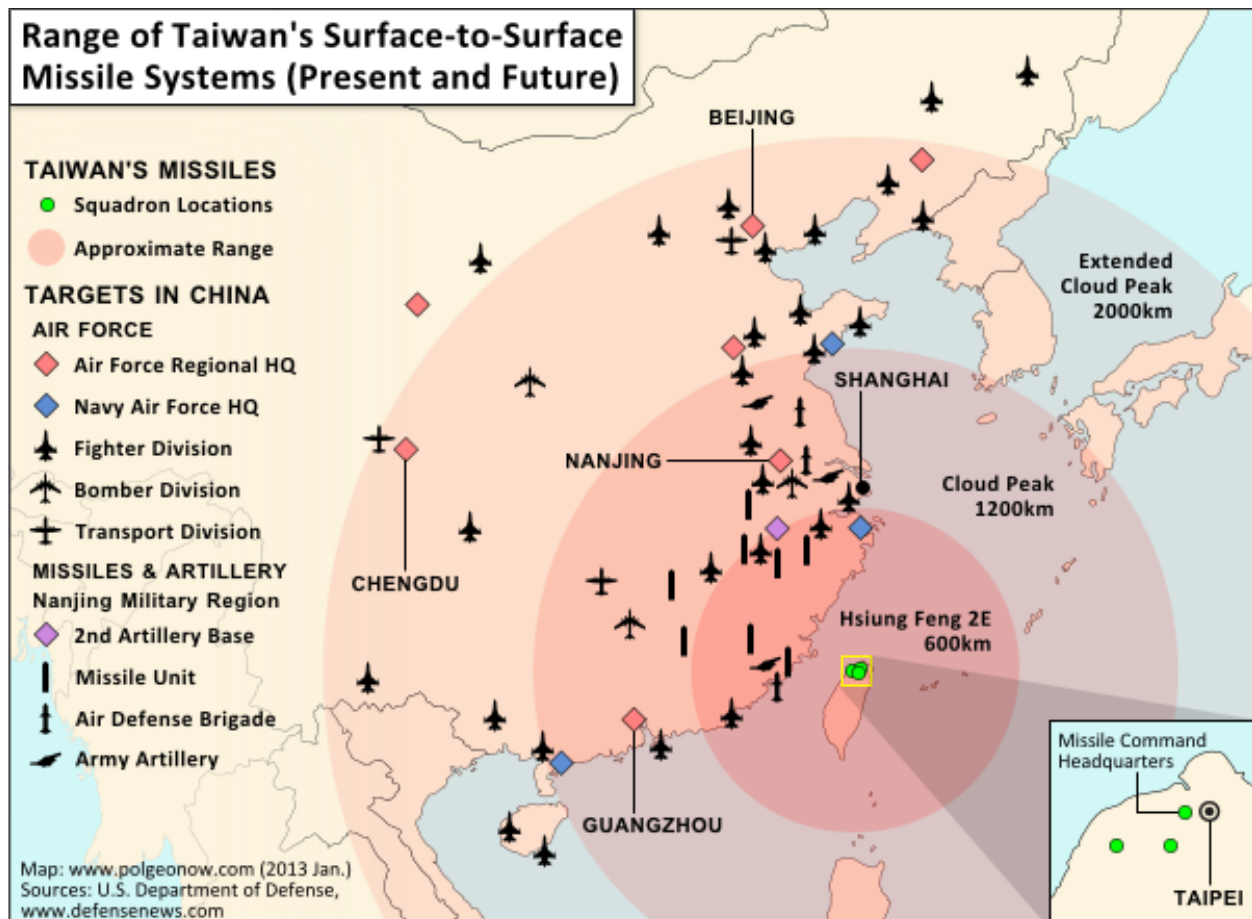
Map of Chinese missile systems.

Source: <http://www.reseau-asie.com/article-en/future-taiwan-cabestan/>

“While it is not likely that China would conduct a full-blown attack on Taiwan, the most likely scenario is for China to attempt a blockade of the island.”

short range missiles. AIDC plans to establish a maintenance center on the island in conjunction with Lockheed-Martin for the F-16 program, pending government support. The upgrade program will be completed by 2028.

Although the upgrade of F-16A/Bs is a success and will increase Taiwan's capabilities over the long run, Taiwan will effectively be holding only half of its current combat-ready fleet by 2016 due to the retirement of Mirage 2000 and F-5 fighters, the fact that 24 F-16A/Bs will be in upgrade facilities and thus inoperable, and that 16 fighters are permanently based at Luke Air Force Base for training. Thus, Taiwan will hold only 73 operational, but not modernized, F-A/Bs at any given time (until 2021, when the first 24 upgrade jets are delivered).



Experts claim that Taiwan does not have enough fighters, whether at war or during peacetime. While the F-16A/Bs are withdrawn for upgrade, new ones must fill the “fighter gap.” Observers recommend the two governments create a plan to address the now even larger fighter gap as quickly as possible. There are a few feasible action plans, with the most convenient option calling for the U.S. to send 24 new F-16A/Bs while the existing 24 are taken out of commission for upgrade.

In May 2012 the US House of Representatives voted in favor of selling Taiwan 66 F-16C/Ds. These fighters would fill the gap, and appear to be an attractive plan for Taiwanese policymakers. The C/Ds are an improved lot over the A/Bs; however, the Ma administration has reportedly shown decreased interest in the C/Ds because Taiwan is perhaps seeking new F-35s as a more cost-effective option over the long term. Officials at the Ministry of National Defense (MND) have denied any decision to reduce Taiwan’s order of 66 F-16C/Ds due to budget issues.

Though the F-35B fighters are especially attractive for short takeoff and vertical landing (STVOL) and other innovative capabilities that are well suited for Taiwan’s terrain and other needs, many believe the program is not feasible because of the high cost and Taiwan’s budgetary constraints. Further, in order to host F-35Bs, the island would require a restructuring of maintenance facilities, which may prove too expensive. Limited availability means delivery would be many years coming.



F35 fighter, via Source: <http://www.chnarmy.com/html/2010-05/91.html>

However, others note that by the time Taiwan actually receives the F-16C/Ds, they may be outdated and the F-35Bs more cost-effective.

Also in May 2012 Taiwan delivered a contract of US\$171.8 million to Boeing for an estimated 15 to 30 Block III Apache AH-64D attack helicopter packages. At the end of the month an additional US\$97.3 million contract modification was received. Estimated completion dates are late 2014 and 2017.

A January 2012 order for 15 Block III LONGBOW Fire Control Radars for the Apaches indicates Taiwan’s desire to possess stronger fighting capabilities. Industry experts, however, cite

the fact that Taiwan has not formally requested LONGBOW Hellfire missiles, which integrate with the LONGBOW Radars for enhanced fighting performance. Thus, unless Taiwan orders the Hellfire missiles, the Apache helicopters cannot be expected to increase the island's firepower by a substantial amount.

Additionally, Taiwan delivered a US\$43.2 million contract to Sikorsky Aircraft Corp. to engineer 4 Black Hawk UH-60M helicopters for conversion to the island's military specifications, at a total cost of US\$91.8 million. The expected delivery is late 2014, and the 4 helicopters are part of an ongoing 2010 contract arms package that includes 60 helicopters.

In September, reports declared testing on the indigenous Wan Chien (10,000 Swords) air-to-surface missile complete. The missile, which will arm the Ching-Kuo IDFs, is designed to strike Chinese airports, runways, and ports. An expected 100 or more explosive warheads will be placed on each missile, according to a Chinese Nationalist Party (KMT) official. Mass production is expected to begin in 2014.

“Less reassuring, Taiwan has four submarines; however, only two are combat-ready, while the other two leak water and are used for training purposes only.”

Sea Control

While it is not likely that China would conduct a full-blown attack on Taiwan, the most likely scenario is for China to attempt a blockade of the island. If China should conduct a blockade successfully, Taiwan would be in a dire situation if only for the fact that the island currently stocks only a 30-day supply of reserve energy resources. China, for its part, is reportedly developing capabilities that will allow it to surround Taiwan from its eastern border. Thus, Taiwan must be able to protect itself from both directions. Currently, it is unable to do this.



Hsiung Feng III supersonic missile, via Source: <http://www.wantchinatimes.com/news-subclass-cnt.aspx?id=20110629000026&cid=1101>

Earlier this year, discussion centered on Taiwan's indigenous development of a 450-ton, twin-hulled corvette. Lung Teh Shipbuilding Co., a small, private Taiwan firm, is expected to produce up to 12 vessels, each equipped with anti-ship missiles including up to eight Hsiung Feng (Brave Wind) II missiles and eight Hsiung Feng III supersonic missiles. The prototype is expected to be delivered in 2014 at a final cost of US\$30.1 million. Issues with technical requirements previously made Taiwan's largest ship building company, China Shipbuilding Corp., decide to opt out of the bidding process, thus clouding the expected success of the development project.

Taiwan plans to spend US\$1.2 billion to build six new mine-hunters from 2013 to 2025. With the addition of two Osprey-class mine-hunters located in the southern city of Gaohsiung, recently received from the U.S., this is expected to significantly enhance the navy's ability to counter a blockade.

Less reassuring, Taiwan has four submarines; however, only two are combat-ready, while the other two leak water and are used for training purposes only. According to Defense Industry Daily, because Taiwan sees an enhanced submarine program as crucial, they may take steps to develop their own domestic program.

Local expert J. Michael Cole summed up the expected development of Taiwan's future sea defense strategy as one that can be expected to focus on development of a large fleet of small, swift boats that can sneak up on, surround, and neutralize enemy ships and submarines. Having radar-elusive capabilities is crucial to the successful development of such a program, and thus it is expected that Raytheon technology development will be sought by the Taiwan military.

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Land Defense

Taiwan's current land defense systems can easily be overwhelmed by China's ballistic missile systems. While both the U.S. and Taiwan governments agree that there must be an increase in capability, the two sides disagree on appropriate measures.

Tanks are understood to be the most effective forces against coastal attacks. According to

Defense Industry Daily, Taiwan's "tank situation" is poor due to a deficit in both the quantity and quality of tanks. Taiwan currently has about 1,200 M48, M60, and other "vintage" tanks.

According to reports, Taiwan's MND is attempting to acquire 200 A1M1 tanks from the U.S.'s Iraq and Afghanistan efforts. These tanks are far superior to Taiwan's current tank fleet and can confidently compete with Chinese tanks. The American Institute in Taiwan, however, reportedly has concerns as to the appropriateness of the tank for Taiwan's terrain and infrastructure. Moreover, an official has been quoted as stating that Taiwan has a sufficient tank force and does not need to upgrade, and that tank battle is unlikely anyway. Regardless, the MND has stated it needs a light or medium tank to replace the M41s and M48s.

Taiwan needs to prevent Chinese forces from gaining land by neutralizing incoming Chinese naval vessels and air forces. Most recently, Taiwan's Chung Shan Institute of Science and Technology developed the Ray Ting 2000/Thunderbolt 2000, a "powerful, multiple-launch rocket system" to enhance the armed forces antilanding capabilities. Fifty systems at a cost of US\$483 million are planned. The Ray Ting will replace the island's current 30-year-old rocket system.

In September development began on four Patriot Advanced Capability-3 (PAC-3) missile deployment sites near Gaohsiung and Taichung, with two new units expected in the future. Currently there are three sites, in Wanli, Nangang, and Xindian. The missile sites are designed to protect critical infrastructure and political and military centers. Taiwan purchased 388 PAC-3 missiles as part of a US\$6.4 billion 2008 package. Delivery is expected for 2014-2015.

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Espionage

Espionage is a major issue for Taiwan for several reasons. First, as the Ma administration opens ties with the PRC and increases exchanges through business and tourism, they have done little to sufficiently increase their protection measures against Chinese intelligence gathering. Secondly, the Taiwan government pays scant salaries to its military personnel and government

officials, leaving employees who have information and access to information vulnerable to Chinese targeting. Moreover, espionage not only threatens Taiwan military and political operations, but also serves to make Taiwan less attractive to foreign investment and negatively impacts the island's economy.

Early this year, a suspected Chinese spy, known as Air Force Captain Chiang, was taken into custody at a top-secret military base where Taiwan's main C4ISR systems are located. Early reports stated the spy might have collected information on a joint U.S.-Taiwan early warning radar system and possibly Taiwan's Po Sheng command and control system, developed by Lockheed Martin.

In March Tung Chien-nan, a former agent at the Ministry of Justice Investigation Bureau's China Situation Division, was arrested for luring unsuspecting Taiwanese colleagues into the mainland, at which point they were detained by Chinese officials for interrogation, including possible questions on the whereabouts of Taiwanese spies in China.

In early summer, reports focused on Taiwan's inability to secure and/or keep track of sensitive data. Most notable was the disappearance of a top-secret laptop and a classified naval chart from a fast-attack, antiship missile vessel. The chart detailed strategic information of wartime naval deployments and relevant hydrographic data in the Strait. The military stated that, should enemy forces acquire the missing chart, its information could threaten the security of wartime naval operations.

Several high-profile indictments included high ranking officials from military and intelligence agencies and the academic community, including one former colonel from the NSB and a former major from the MND. In June Professor Wu Chang-Yu from the Central Police University was found guilty of handing over information regarding the controversial spiritual group Falun Gong and pro-Tibetan activities in Taiwan to mainland authorities. The information was collected with assistance from former students who worked with the National Police Bureau's Foreign Affairs Department.

Cyber Warfare/Electronic Warfare

China is deeply engaged in enhancing and expanding its cyber and electronic capabilities, with the goal of utilizing cyber warfare and digital warfare to collect intelligence about, among other things, Taiwan. In combat situations Chinese cyber/digital warfare can be used to neutralize or

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counterattack not only Taiwanese forces, but U.S. force operations as well.

A recent report details the discovery of new parabolic dishes located in Fujian at the eavesdropping site known as Dongjing Shan, known to be in operation since 1965. The new dishes give China an increased edge in digital warfare and are purportedly capable of covering the entire area of Taiwan, up to the U.S. base in Okinawa, and intercepting nearly all electronic signals from northern Taiwan.

The Taiwan NSB reported in its 2013 budget plan over 1 million cyber/digital attacks against its website from Jan-June 2012 alone. Other government, economic, and military websites were also targets. Most attacks come from Chinese military and government operations.

To combat this real threat, the Taiwan NSB plans to increase spending for an expansion of cyber units, including a new specialist group for electronic and internet warfare; expansion of the existing Communication, Electronic, and Information Bureau; and further plans to create an experimental facility for simulated warfare.

Taiwan's Domestic Development Capabilities

Taiwan has the capacity to manufacture large equipment and develop defensive projects, but for the most part lacks the technical know-how to do so effectively. That being so, the AIDC's successful development of its F-CK-1 fighter jet fleet in the late 1980s and the recent successful development of the Chung Shan Institute of Science and Technology's Ray Ting 2000 rocket systems showcases Taiwan's capability to develop high grade military technology if it desires. The future development of the new corvette fleet should prove to be a strong indicator of Taiwan's development capabilities.

To date, the Chung Shan Institute of Science and Technology has successfully developed 32 unmanned aerial vehicles (UAVs), designed to perform reconnaissance missions at war. Despite initial reports of systems flaws and one missing UAV off the island's coast, the UAVs were successfully deployed to disaster zones in June of this year. According to the KMT's Official Website, this "first surveillance mission" proved successful and "immediately transmitted real-

time information to disaster command centers.” The UAV research and development comes as Taiwan is shifting focus to asymmetrical warfare strategies.

The 2013 Budget Plan reflects Taiwan’s commitment to developing indigenous weapons and defense systems, stated a KMT lawmaker. US\$83.6 million is allocated to mass produce the indigenous 650-km-range Hsiung-Feng IIE missile and US\$1.2 billion for the 12-year development of six mine-hunters. An additional US\$7.8 million will be invested into the development of integration systems to arm Ching-Kuo IDFs with Wan Chien air-to-surface missiles.

“As China increasingly invests in modernizing and enhancing its PLA, Taiwan has conversely allocated decreased percentages of total government spending to its defense budget, year after year.”

Defense Budget Issues

Since the early George W. Bush administration U.S. policymakers have voiced concern over their perceived commitment of the Taiwanese to their own defense. As China increasingly invests in modernizing and enhancing its PLA, Taiwan has conversely allocated decreased percentages of total government spending to its defense budget, year after year. Under the Ma administration defense spending was cut from 20.2% to 16.4% of total government spending. In early September the NSB delivered its 2013 Budget Plan to the Legislature for review. Early reports indicate the budget will total NT\$314.5 billion, a decrease from last year, to 16.17% of total government spending.

Though 16.17% is a significantly high figure, especially compared to other states, it represents the quick decrease of nearly 10 percentage points over time from nearly 25% of total government spending in 1994. Factors for decreased defense spending include increasing ties between China and Taiwan, KMT aversion to conflict with the mainland, and Taiwanese citizens’ increasing desire to shift government resources into social programs.

In early summer local media popularized a survey conducted by the pro-Nationalist 21st Century Foundation that purported most Taiwanese youth to be against high government spending to beef up national defenses. Upon closer analysis, however, much of the study’s methodology and findings, and the article’s presentation of the survey were suspect. The misleading report served

to create a perception that in case of a Chinese invasion young Taiwanese would neither fight nor want to pay for the fight.

Some in the academic and media communities argued that the article and its impact were yet another illustration of how politicians and associated groups promote their own contrived objectives, and that this attitude might create a self-perpetuating mood of futility towards resisting China's influence and aggression. These same critics further accused the KMT of driving such sentiment in order to more easily regain access to the Mainland and/or pursue policies toward reunification.

Taiwan has raised issues in past years over the increased prices of arms sales deals, at times resorting to language which accuses dealers of extortion. Indeed, the most recent debate surrounds the F-16 retrofit program, which saw a significant increase from original price estimates, by some accounts as much as 40%. The U.S. justified the increased estimate of US\$5.85 billion with the fact that new advanced systems would be placed onto the F-16A/B airframes, purportedly making them as advanced as the requested C/D airframes, but at a significantly lower price. Taiwan responded to the increased estimate by declaring several upgrade systems as costly and unnecessary, with a final agreement placed at a total value of \$US3.8 billion.



F16 fighter, via Source: <http://thediplomat.com/china-power/taiwan-set-for-f-16-upgrade/>

In accordance with the January 2000 “Organization Act of the Ministry of National Defense,” in December 2011 the Legislative Yuan passed a series of measures to advance the projected period of transition to an all-volunteer military force, expected to be complete by early 2015. The continued commitment by the MND to transition to an all-volunteer force, which is significantly more costly than the current obligatory service, builds confidence within U.S. policymaker circles.

Conclusion

With the F-16A/B retrofit program approved and underway, Taiwan can be expected to significantly increase its air force capabilities. However, as experts note, the island remains significantly disadvantaged against a rising China. It is imperative that Taiwan acquires an increased quantity and quality of fighters in order to fill the gap lest Taiwan be vulnerable to Chinese attack and easily inundated by Chinese forces. Moreover, recent reports indicate the PLA conducted a series of tests on missiles that could render Taiwan's PAC-3 systems ineffective. Effective land defense remains a worrisome and daunting task. Combined with Taiwan's limited sea capabilities vis-à-vis China's, Taiwan has little ability to maintain any credible deterrence.

The proposed 2013 Budget Plan allocates nearly US\$1.9 billion, or 66% of the total budget, towards arms procurements from the United States. While U.S. arms sales are politically symbolic and militarily significant, Taiwan is also well served through U.S. partnerships in which learning and assistance can take place within Taiwan's indigenous development programs. Not only is this practical for a budget-strapped military, but it also helps foster ties and understanding between the countries' military and technology communities.

While the 2012 NSB Budget Plan clearly acknowledges the need for Taiwan to increasingly invest in asymmetrical defense technologies and strategies aimed at countering cyber warfare, it remains to be seen if Taiwan will act on the recommendations of the U.S. to devote increased resources to its national defense. Under the current Ma administration, significant increases seem highly unlikely.

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